DOCUMENT RESUME

ED 126 581 EA 008 523

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TITLE The Goal Model and Organizational Change.
PUB DATE Jun 76
NOTE 30p.; Paper presented at the Annual Meeting of the Midwest Sociological Society (St. Louis, Missouri, April 21-24, 1976); Revised and elaborated June 1976

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Conceptual Schemes; Cultural Factors; Educational Sociology; *Institutional Environment; *Models; *Organizational Change; Organizational Climate; *Organizational Theories; Professional Associations; Universities

ABSTRACT

This analysis is an attempt to specify the purposes and factors in organizational change and continuity. Denial of the purposeful premise makes possible an environmental perspective that views the characteristics of organizations as a function of their adaptation to their environment. This approach is based on the premises that (1) change in what organizations do is a function of the selective allocation of resources to activities within a given set of activities, and (2) the set of activities for an organization at any time is given by the institutional culture. Change in the nature of an organization's activities is, in professional organizations, a function of change in the external affiliations of the professional staff; in bureaucratic organizations, it is a function of the environmental elements of control organization concerns and the institutional culture of peer organizations. From this it follows that increasing bureaucratization of professional organizations shifts the locus of activity and change from one set of external influences to another set. (Author/JG)

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THE GOAL MODEL AND ORGANIZATIONAL CHANGE*

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The purposive premise has been a major element in much of organizational theory (Cf. Selznick 1948, Parsons 1956, Simon 1964, Etzioni 1961, and 1975, Hall 1972 and many others). Beginning with the fundamental though indirect attack by Thompson and McEwen (1958) there have been many criticisms of this approach (Cf. Yuchtman and Seashore 1967), but despite these we have clung to the goal model as the explanation of continuity, order and direction in organizations. For example, Hall argues that:

> The goal concept . . . is vital in organizational analysis . . . . The dynamics of goal setting and goal change do not alter the fact that goals still serve as guides for what happens in an organization. If the concept of goals is not used, organizational behavior becomes a random occurrence . . . . Since organizations have continuity and do accomplish things, the notion of goals as abstractions around which behavior is organized remains viable. (Hall 1972:95).

The belief that the anticipated ends or goals "serve as guides for what happens" in organizations is a part of the common sense of our times, but in terms of the evidence available we can just as well argue that what happens determines the purposes just as in other contexts we can argue that "In every age invention has been the mother of necessity and supply has caused demand" (Ferguson 1976: 75). The denial of the purposive premise does not cause "organizational behavior to become random", it

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* Presented at the Annual Meeting of the Midwest Sociological Society, St. Louis, Missouri, April 21-24, 1976, revised and elaborated June 1976.

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merely means that we must look elsewhere for the factors and processes which account for the social order.

The use of this teleological purposive approach has inhibited the raising of a fundamentally important sociological question - the question of the "origin of the species" of organizations. The issue here is not a new one in scientific history. Up to the 19th century the forms of plant and animal species were thought to be given, fixed and immutable, defined by divine intent or by a pre-determined natural order. The growing evidence from paleontology that new species had come into being raised the question of the origin of the species for natural historians (Cf. Huxley, 1960).

Similarly, we know that new species of social units have come into being in the history of human societies, governmental forms, for example, and their functions are not simply a differentiation of more primitive expressions of those functions. The forms and the organization are new. Sociology should no longer avoid the problem of the origin of the species of organizations nor the corollary question of the causes of change in social forms.

In general, we have accounted for major organizational features by reference either to the consciousness of individuals - their wants, needs, or motives - or by reference to culture as collective consciousness which defines collective purposes and societal needs. And in this we have followed the general pattern of sociological thought which has stressed the psychological and teleological (Cf. Hinkle and Hinkle 1954) in conformity with the thought patterns we inherited from the Greeks (Cf. Nisbet 1969). In recent years we can find movements in research and organizational theory which imply quite a different attack on the problem. In this paper I seek to delineate this emerging alternative approach and in so doing to define some new research questions and redefine some old ones.

Much of what follows has come out of attempts to understand the factors affecting the nature of universities and what they do. In recent years, under the environmental pressures for accountability engendered by the society's problems of resource allocation, there have been major attempts to define university purposes and goals and to structure university activities to more clearly satisfy those purposes. Critics of these goal analyses and assessments have made the point that there are latent functions of universities that may be not only important to the long-run survival of universities, but are also not measurable as specific immediate outcomes. Historical analyses of the university as an institution suggest that the morphology, character and activities which they have had at any particular time were little related to the manifest issues and judgments of the previous eras.

In attempting to seek answers to some of these questions about universities I have directed my students to studies of the relationships between activity patterns, structural forms, and their consequences. In much of this research we have found that the attitudes of faculty members and students toward their work were functions of structural conditions and of collective rather than individual biographies. For example, Razak found that institutional loyalty (expectation of remaining at the present university) was a function of the collegial-bureaucratic mode of departmental decision-making (Razak 1969). Similarly, Sutherland found that graduate student attitudes toward the modes of change in universities (burn it down-reform possible) were a function of the departmental mode of treatment of students by faculty as predicted by the aggregated faculty institutional loyalty and professional commitment. In other studies our data show that the degree and sign of the correlation between organizational loyalty and professional commitment, rather than being high negative as Gouldner asserted (Gouldner 1957) depends upon the nature of the

organization and that we may have the additional latent role types of local professionals and those alienated from both profession and organization (Warriner 1970b,) Similarly, our data have suggested that faculty activities (publication) and projected activities (role title preferences and paired activity choices under restricted conditions) were a function of the modal sources (type of university in which trained) of the faculty in that university (Warriner and Murai 1972).

Much of this work has suggested that the manifest goals of universities as defined by administrative committees or by faculty sentiments (Cf. Gross 1968) at best reflect only a small portion of the influences on the character and activities of contemporary universities. I have therefore sought a way of understanding universities which does not rely upon the logics of administrators, the sentiments of the workers, or the rhetoric directed to various publics by both. This has led us to a concern for the social environmental conditions under which universities, as examples of organizations in general, take the forms they have and do that which they do.

In the discussions which follow our major illustrative referent will be universities as a particular species of organizations, but the attempt is made to recognize their special character and to expand the concepts and arguments to encompass other kinds of organizations as well.

Outlines of an Alternative Approach

The developments of the past twenty years in organizations research, especially the growing interest in organizational environments, is a movement toward an approach that has been used by the evolutionists in biology and earlier by Galileo in physics. The general pattern of attack is that which, in different contexts, has been called the Galilean in contrast to Aristotelean (Cf. Lewin 1935, Coutu 1949), the "ecological" (Cf. Duncan

and Schnore 1959, Duncan 1961, Hawley 1973) or the "ecological-evolutionary" (Lenski 1970). The central idea is that the characteristics of things, in this case organizations, are a result of the process of adaptation of those things to their environments, not simply an unfolding or elaboration of primordial functions.

Ecology is usually defined as concerned with the relation between a population of organisms and their physical and demographic environments. In this sense the use of "ecology" in organizational analysis is clearly analogical. The relevant environment for organizations is the environment of other social actors - other organizations, groups, publics, and individuals. More specifically, an organization's "ecological niche" (Zald 1964) is the set of actors entailed with it through transactions of some kind, it is a transactional field. The "ecological" thesis in the study of organizations is then that the change or continuity in organizational characteristics are a function of the change or continuity of their social environments or transactional fields.

Given the order of phenomena called "organizations", we have two levels of origin or change questions: (1) what is the origin of the between species differences - i.e., the differences between banks, hospitals, automobile factories and universities, etc.; and (2) what is the origin of the within species differences - e.g., the differences between different kinds of universities such as major research universities, teaching oriented universities, regional service universities, etc. These are the questions we wish to answer by focussing upon the adaptation of organizations to their environments.

What, though, are the features, dimensions or characteristics of organizations whose change makes the organization a different species or makes for a specialization that could be called a sub-species difference? This is the question of the fundamental distinctions between organizations

and other kinds of social structures or societal units, and the question of what most fundamentally distinguishes different species of organizations from each other?

Even those who do not fully subscribe to the purposive doctrines have distinguished organizations from other kinds of social units by reference to their presumed goal-seeking or purposive character. If we deny the relevance of this telic and intensional assumption we are forced to seek other defining criteria. (Even without the denial, the use of "goal-seeking" as a defining criterion for the class is difficult to operationalize, and hence we are forced to rely on other criteria.)

The most obvious characteristic of organizations in comparison with other kinds of societal units is the centrality of a system of technical activities (Cf. Warner 1941; Warriner 1970a:Ch 2),"techniques for transforming raw materials" (Perrow 1973:56), or what Woodward calls the "task analysis approach" (Woodward 1973:59). A focus on these phenomena suggest a more adequate delineation of organizations as those social units oriented around a set of technical activities which routinely and continuously take certain raw materials (physical, biological, personal, social or ideational) from the environment and transforms them before returning them to the environment. Many uses of the purpose criterion imply this formulation and it can be substituted with greater precision and without any change in the set of concrete phenomena referred to.

If the central fact of organizations is the centrality of a technical activity system then organizations are to be differentiated from each other by the specific character of their sets of technical activities. That is, welfare agencies, automobile factories, hospitals, banks and universities are differentiated not by purposes, but by the fact that they have different sets of activities, using quite different skills, with acts organized into quite different programs of action, and utilizing different tools and

materials.

Organizations have other features than technical activity systems, especially, social organizational features per se (roles, social positions, status levels, authority structures, systems of communication, etc.). These other features have been of interest to students of organizations and attempts have been made to account for the values of these dimensions by the characteristics of the technical activity system. However, these dimensions and features are not unique to organizations, but are also found in other kinds of societal units (groups, associations, communities, societies). Thus, at best, they can serve only as auxilliary classifying criteria. Furthermore, changes in these features as they are found in organizations may be a function of factors which are incidental to organizations or common to all kinds of societal units. Therefore, it seems appropriate in seeking answers to the problem of the origin of the species of organizations or the change in organizational species, to focus first of all upon the changes in the technical activity system.

In the biological case, a change in species characteristics comes about through the selective survival and reproduction of those members of the species carrying the traits which most fit the species to the environment. In the case of organizations we do not have reproduction in the same way, nor can we assume that the "genetic" patterning of the individual organization remains fixed through the life of an organization as it does through the life of an organism. It is in this sense that Lamarck's solution to the biological problem, i.e., the inheritance of acquired characteristics, is probably more apt to the sociological problem than it was to the biological one. "Adaptation" cannot be measured simply by the survival or death of organizations as wholes, but rather, is indicated by the survival or loss of specific organizational traits.

An activity system, whether an organization's total activity set, or some partial sub-set, requires resources: raw materials, physical energy, and human energy. Thus, we start with the theorem that activity systems survive to the extent to which they receive resources from their environments.

Whatever the work unit level of concern (individual, work team, department, division, or total organization), that unit must have energy and raw material resources to do what it does. Every businessman knows that his company will die if it does not get the resources it needs whether in the form of capital, raw materials or personnel. Similarly, sub-sets of activities within organizations are maintained only so long as energy in some form flows to them either in the allocation of personnel time or in general support of the activity. Thus, we postulate that the major control over activity systems lies in the direct or indirect control of resource flow.

This theorem provides the method for solving one half of the problem of the origin of the species of organizations. It tells us to look for the factors in the environment of activity systems which determine the allocation of resources to that activity system whether it is a total organizational set or some partial sub-set.

However, there is another half to the problem. The solution above starts with a set of activities given at any point in time and proposes that they selectively survive according to resource flow, but this does not account for the origin of that set of activities. In part, this is a historical problem involving questions of the differentiation of activity systems and "mutation" as well as "cross breeding", but even more fundamentally it is a question of the relationship among the individuals in a species.

In the biological case, this part of the problem is solved by the assumption that a population of individual organisms constitutes a species because they are connected through a common ancestry and thus belong to a common gene pool. In the case of organizations, the question becomes the fundamental one as to whether there are real "genetic" interconnections between the individual organizations in the species or whether our assertion of a "species" of organizations is merely the reification of a simple classification?

The crucial species fact, whatever the processes involved, is that the individual instances of the species have been constructed in terms of and as a function of a common template, model or pattern. In biology the pattern is carried in the genes. In the case of societal units the common pattern exists in the institutional culture. The history of institutions suggests that the particular organizations are constructed in terms of the patterns characteristic of that institution at the time of their creation (Cf. Stinchcombe 1965). That is, organizations are constructed in terms of the patterns provided by other organizations that are doing the same thing with the same raw materials.

Within the scope of this paper it is not possible to pursue these problems of the nature and functions of institutional culture, that is, the questions of the between species differences. Rather, I wish to focus on the within species differences, the problem of resource allocation as the process of selection and survival of traits within a species.

Organizational Change as a Function of Resource Allocation

The general notion that resources make a difference in the survival of activity systems is neither new nor unique. However, the usual view assumes that the resources available to an organization are a direct

function of the value of the products as defined by the organization, and that organizations survive or fail in the extent to which they are efficient and effective in the use of resources. In the folklore of capitalism managerial power, prestige and perquisites are justified by these assumptions of the importance of efficiency and effectiveness.

However, a broader view and the historical evidence suggests that the resources available to an organization (Northrup, for example) or to a class of like organizations (the railroads, for example) are neither a function of efficiency or effectiveness of resource utilization in the production of any given manifest outcomes. The managerial problem of efficiency is that of the creation of a surplus in resources which can be allocated to uses other than the support of the activity system, i.e. to managerial and stockholder rewards.

Secondly, organizational activities have many outcomes, recognized and unrecognized by any set of actors at any particular time. But, organizational logics focus upon one outcome out of the whole set of real outcomes, on the defined product and not on other consequences, and upon certain value dimensions of that product and not on the other utilities or disutilities that it may have for those in the environment. However, as we examine the resource flow to organizations and sets of organizations over time there is much evidence that the flow of resources is affected by other outcomes and dimensions of the outcomes than are identified by the "product" (e.g., the current societal responses to Reserve Mining and to various nuclear power plants).

In short, organizations have little control over the allocation of resources from the environment to themselves through control of the "output" portion of the input-output cycle. The arguments for this position, as sketched above, are summarized in Figure 1. The model is appropriate not

only for so-called "economic" organizations, but also for other kinds of organizations such as universities, social service agencies and hospitals.

[Figure 1. about here]

The model differs from the usual administrative or managerial model for this cycle (1) by recognizing that the real outcomes are more extensive than the "product", and (2) by recognizing that the manifest outcome is a function less of what the organization does than of the character of the response of the actors in the environment. What people "pay for" at any given time may have little relation to the outcomes as defined by the organization.

A full analysis of the environmental factors to which organizations are adaptive, i.e., the factors in the environment which determine the flow of resources to an organization or a set of organizations, would involve an analysis of the factors in the recognition and evaluation of outcomes, and an analysis of the social structures defining the relationship between those who evaluate the outcomes and those who more directly control the resource allocation, and, finally, of the organization's capacity to influence these structural relationships. However, in this paper we leave these problems aside in order to focus on the internal allocation of resources.

Internal Resource Allocation. The internal allocation of resources differs from one kind of organization to another, especially, in the contrast between "bureaucracies" and "professional organizations". For our purposes a useful way of distinguishing these types is in the relative proportion of two kinds of work units: (1) unspecialized work units in which each unit (whether individuals, teams, departments or divisions) has the capability for and is charged with the performance of each of the major activities in the set of activities central to the organization, and (2) specialized work units in which each unit has the capacity for performing only a particular activity in the set of activities of the

organization. It follows from this that unspecialized work units are able to differentially allocate resources to specific activities within the set for which they are responsible, while specialized units cannot since they perform only one activity.

"Bureaucratic" organizations are characterized by specialized work units and the allocation decisions are not made by the work units, but by the set of actors called management. On the other hand, "professional" organizations are characterized by unspecialized work units - the professional workers themselves - which have the capacity to selectively allocate resources (especially their time and energy) among the several activities for which they are responsible. Figure 2 summarizes these propositions about the internal allocation of resources through specialized and unspecialized work units.

[Figure 2. about here]

This analysis leads to two related hypotheses concerning the speciation of organizations: I. For professional organizations, the within species differences (e.g. the differences between different universities in their relative emphasis upon teaching, research, service or other activities) are a function of the factors affecting the allocation decisions by the professional (unspecialized) work units. We can summarize these factors as "professional staff orientation". II. For bureaucratic organizations, the differences between members of the species (e.g. the relative emphasis upon product development, marketing, quality control, primary or secondary raw material processing, etc.) are a function of factors affecting executive allocation decisions. These factors may be summarized as "executive perspectives."

It is important to recognize that the terms "professional staff orientations" and "executive perspectives" refer to the syncretion of forces affecting the allocation choices as these are made by the particular set

actors. Although this syncretion may be reflected in "attitudes" or in other conscious representations on the part of the actors, there is no implication that these forces necessarily operate through consciousness or that such consciousness is a deus ex machina of organizational change or stability. These are not primarily attitudinal terms.

The next step is, of course, the analysis of the factors, summarized as "staff orientations" which account for the allocations made by the unspecialized work units, and an analysis of the factors, summarized as "executive perspectives" which account for the creation and allocation of resources to specialized work units.

Executive Perspectives, Staff Orientations and Organizational Culture

"Staff orientations" and "executive perspectives" are functions of categorical biographies, i.e. characteristics of the positions and of the criteria by which occupants are selected for these positions, rather than functions of personal biographies in their individual uniqueness. Although idiosyncratic biographical factors may have some effect on the choices of particular individuals, these are wiped out in the commonality of the categorical biography. For example, there is considerable informal as well as formal evidence that universities which stress research activities select their faculty members from quite different "training" schools than do those which stress teaching or service over research.

Staff Orientations. Universities, as professional organizations, differ from bureaucracies, such as factories or banks, in two major characteristics of the workers: (1) these professional workers have external affiliations which provide standards for their work, judgements of and rewards for that work, and other opportunities for performing that work independent of the particular organization. (2) The organizational controls over the work of the professional worker are indirect and often reflect the external

affiliation standards and judgments. (The dilemma of bureaucratic organizations which employ research professionals is that increased control over those workers vitiates the values to be obtained from them as professionals, but without such control these workers often go off on their own tangents (Cf. Kornhauser 1962).)

The external affiliations have three major elements: (1) the professional worker undergoes a lengthy training in other organizations in the species, (2) the professional workers are affiliated in professional organizations with others who are similarly trained and employed, and (3) the professional workers have careers involving employment in other organizations of the same species. All of these characteristics of the categorical biographies involve role definitions and career contingencies that relate to the professional workers' time and effort allocations in their employing organizations.

Several complex functions are involved in this set of factors which affect "staff orientation". These can be summarized in three hypotheses: (I) the type of training university (as measured by its activity set emphases) is correlated with orientation, but the effect decreases with academic age (length of time since the degree). (II) The type of previous employing organization is correlated with orientation, but the effect increases with length of time at previous university and decreases with length of time at present university. (III) Professional society participation (attendance at meetings) functions to increase the strength of these correlations between external affiliation factors and orientation.

Intra-organizational influences on the time and effort allocation of professional staffs (their "orientation") are generally indirect. Such controls are exercised by the executive through attempts to control the selection and tenure of professional staffs and through this the nature of

the categorical biographies and external affiliations. However, because of the relatively slow turnover in staff any executive body is working with a staff that has been selected, retained, and promoted in the past. Organizational culture becomes important as it validates or denies these categorical biographies and the external affiliations of the professional staff.

As a result of these considerations I hypothesize that the set of factors identified as "staff orientations" consists primarily of environmental influences rather than intra-organizational influences on the time and effort allocations by the unspecialized work units.

A Preliminary Test. In one of our studies of universities we sought to determine the factors associated with faculty members' time allocations. Probable time allocations were identified by a questionnaire instrument consisting of ten pairs of five activities - teaching, research and publication, university service, community service and professional society service - so defined as to require about equal time-energy commitments and of equal value to the respective "consumers". Data were obtained from 56 to 76 percent of the "liberal arts" faculty members in each of three midwestern state universities, a total sample of seven hundred and seventy-eight respondents.

The activity choices were quite different for the faculties from these three schools. These differences roughly corresponded with both the degree of bureaucratization (as measured by faculty reports of participation in six academic decisions) and with the sources of the faculty. Table 1 shows the percent of times each activity was chosen (as a percent of the total times possible) along with the data on bureaucratization and faculty sources.

[Table 1. about here]

The results are even more telling when we examine the choices of the "teaching" - "research paper" pair alone: at school A the faculty chose teaching only 48% of the time and at B 50% of the time, but at C "teaching"was chosen

over "research paper" 65% of the time.

Next we sought to determine whether our hypotheses about external affiliations of the faculty were associated with activity choices. As a summary indicator of the effects of sources, academic age, and length of service and professional society affiliation we used measures of "organizational loyalty" (responses to the statement "I expect to leave this university in the next three years") and "professional commitment" (responses to a set of similar questions about the profession). By use of these two measures we identified those faculty members of three major types: "itinerants" (low loyalty and high commitment = Gouldner's "cosmppolitans"), "local professionals" (high loyalty and high commitment), and "local institutionals" (High loyalty and low commitment = Gouldner's "locals"). For the combined sample these types represented, respectively, 6.2%, 19.9%, and 8.1% of the faculty.

As expected, these types showed quite different patterns of activity choices. "Writing a research paper" was chosen 80% of the times possible by the itinerants, 65% of the times possible by the local professionals, and only 57% of the time by local institutionals. "University service" was chosen 38% of the times possible by local institutionals, only 25% of the times possible by local professionals, and 14% of the times possible by the itinerants. Both the itinerants and local professionals made professional society service their third choice, but the local institutionals placed it last.

Our arguments imply that in the more bureaucratized universities the organizational activity preferences will stress different activities in each organization and that this should be indicated by those faculty members most responsive to bureaucratic interests. Our data support this inference. The itinerants and the local professionals made very similar choices at each of the three schools, although those at school C differed

more from the combined average than did those at B and A. However, the local institutionals showed quite different patterns at each school. At school A, the local institutionals were very similar to the local professionals in their choices, at school B the local institutionals gave greatest preference to "community service" and were unlike any other group at B and unlike the local institutionals at other schools. AT school C, the local instiutionals "teaching" followed by "university service".

In general, these patterns conformed to the "sense" of the schools as we understood this from interviews with Deans, Departmental Chairpersons, and faculty members. At school A there is much more a sense that what is expected of faculty members is consonant with the expectations of the profession while at school C the expectation is that the faculty member is hired to teach and that research is something he does on the side for his own aggrandizement, while at B there were unuaual administrative pressures emphasizing community service.

There are a number of problems in the interpretation of these data, but in general, they confirm the hypotheses that professional orientations are a function of the external affiliations and that these external affiliations become less important as the organization becomes more bureaucratized.

Executive Perspectives. By the "executive" we refer to that set of actors in an organization engaged in the secondary activiteis of that organization. In universities this includes presidents, deans, and department heads, and the various university governance bodies. The executive, however organized and integrated, has the capacity to create and to allocate resources to specialized work units, and, through this capacity to affect the proportion of total resources which go to particular segments of the activity system. These and other executive actions may be viewed

as a function of "executive perspectives" conceived as the syncretion of forces affecting executive decisions.

In many organizations the executive is a complex sub-system within the organization. In order to operationalize the concept of executive perspecitves it is necessary to describe this executive sub-system and the various inter-relationships within it. However, we can continue the general analysis without this detail.

In organizations the executive has these features: (1) the members of the executive are selected by or in terms of criteria stemming from parent organizations which make them sensitive not only to directives from these parent bodies (e.g. Boards of Regents), but also to the various control agencies (accreditation groups, Internal Revenue Service, etc.) and thus responsive to the institutional models contained within and implied by these control sources; (2) this selection process also makes them responsive to the documents of purpose as reinterpreted by the immediate past history of the organization, and to the formal rules and procedures which define the culture of the organization; and (3) the members of the executive are associated with their colleagues in associations of peer organizations (e.g. retail merchants' associations, Association of American Universities, etc.), which make them responsive to the models and patterns of activities in the "family" of related organizations.

Without further detailing the arguments involved we can hypothesize that "executive perspectives" are a function of external affiliations of the executive which make them sensitive to (a) the organizational culture, (b) the institutional culture, and (c) "mutation" models which come from other environmental sources through the parent organization or other control agencies. Secondly, we argue that these influences are frequently inconsistent and that to bring consistency the executive seeks to control the environmental influences through such devices as the selection of peer

organizations and through the selection and organization of publics which influence the control agencies.

Organizational Culture. In this discussion "organizational culture" refers to the model of what the organization has been that is contained in rules, practices, and procedures especially with respect to (a) selection and retention of professional workers, (b) the number and strength of specialized work units, and (c) identification of peer organizations and relevant publics. It is in this sense that organizational culture is a conservative element resisting change, but its influence may be vitiated by a high rate of turnover or addition to the professional staff or by a change in the executive selection criteria. In professional organizations the organizational culture is to a large degree a function of the unspecialized staff orientations.

Summary. In the argument so far I have briefly sketched the major considerations in developing a model for explaining why organizations do what they do: in particular, why organizations as technical activity systems are alike and different. In this analysis we have developed our argument on the basis of two premises: I, that the change in what organizations do is a function of the selective allocation of resources to activities within a given set of activities, and II, that the set of activities at any given time is given by the institutional culture. In the analysis we have assumed that the given culture is not a fixed and unchanging model, but like "gene pools" changes as new elements are introduced through "mutations" in the individual instances which are carriers of expressions of the model. These "mutations" are introduced by extra-institutional influences on the concerns of the primary control agencies.

The allocation of resources occurs at two levels: (1) environmental control of resources which flow to an organization or set of organizations, (which serves to sustain or destroy total activity sets), and (2) the

internal allocation of resources to the several activities in the set (which serves to change the composition of an activity set).

The intra-organizational control of resource flow can be summarized in these propositions:

(1) The relative contribution of specialized and unspecialized work units to the total set of technical activities is a function of executive perspectives.

(2) The relative fequency of the activities performed by unspecialized work units is a function of professional staff orientations.

(3) The unspecialized work unit staff orientations are a function of external affiliations of the staff.

(4) The specialized work unit orientations are a function of executive perspectives.

(5) Executive perspectives are a function of control organization directives and interests which emphasize institutional culture, organizational cutlure, and extra-institutional models.

(6) Organizational culture reflects what the organization has been, but its effects may be vitiated by a rapid change in the professional staff or by changes in the criteria for executive selection.

These hypotheses and related arguments are summarized in Figure 3.

[Figure 3. about here]

From this analysis we propose that a change in the nature of an organizations' activities, and thus a change in its species characteristics, is in professional organizations a function of a change in the external affiliations of the professional staff, and in bureaucratic organizations it is a function of the environmental elements of control organization concerns and institutional culture of peer organizations. From this it follows that increasing bureaucratization of professional organizations shifts the locus of continuity and change from one set of external influences to another set. In

bureaucratic organizations publics, peer organizations and other influences on the control organization concerns become much more important than in professional organizations where external affiliations of the staff - the professional training schools and professional organizations - become most important. From this point of view the principal of "academic freedom" and "tenure" can be seen as cultural elements whose function is to prevent bureaucratization of universities.

Conclusion

In this paper I have argued that the dominant paradigm in the study of organizations has prevented a focus upon a central problem of a sociological theory of organizations - the question of the origin of the species of organizations which, by virtue of its nature, encompasses the problem of organizational change and stability. Denial of the purposeful premise means that we can approach the problem from an ecological-evolutionary or environmental perspective in which the characteristics of organizations are viewed as a function of the adaptation of organizations to their environments rather than a function of motives or purposes or of intra-organizational sources. The allocation of resources to activity sets, both within and without the organization, is viewed as the primary process by which the adaptation of organizational species to their environments is tested and hence is the mechanism of change and stability just as selective survival is the mechanism for the origin and change in animal species.

The analysis of the allocation of resources to activities made in this paper indicates that whether we are dealing with bureaucratic or professional organizations the major factors in change and continuity are the change and continnity in the environments of the organization. For professional organizations the relevant environment is the external affiliations of the professional staff, and for bureaucratic organizations it is the

environment of control (or parent) organizations, publics and peer organizations as well as other control agencies.

This analysis has returned us to the question of the relation of technical activity systems to the social organizational characteristics of organizations and thus identifies another fundamental research problem. I have proposed that the mechanisms of organizational adaptation to their environments are of a different character for bureaucratic than for professional organizations. It thus becomes important to understand the factors in and conditions under which organizations become bureaucratic or professional. As used in this paper the concepts of bureaucratic and professional refer to the degree to which an organization is composed of specialized or unspecialized work units, but the analysis implies that the other, more usual criteria for these types either flow from this dimension or are alternate statements of it.

To account for organizational change or stability requires an analysis of the processes which either (a) change the character of the given environmental elements, or (b) change the environmental elements relevant to a given organization. The major control which organizations can exercise is that of selecting and creating the environmental units which affect it. This is most possible for bureaucratic organizations which can select and create publics and peer organization sets. This may be one of the major influences promoting bureaucratization where there is a "turbulent environment" (Terreberry 1968).

This analysis has been an attempt to specify the processes of and the factors in organizational change and continuity. I have argued that this can be done only through the ecological approach which examines the relationship between organizational characteristics and environmental conditions. The relevant environment in this case being the actors and agencies which affect the flow of resources (human and physical energy in whatever form).

Although this analysis, at the start, eschewed concern for social organizational features per se, focussing upon the characteristics of the technical activity system, we have at the end showed how this returns us to a concern for social organizational characteristics, particularly the professional-bureaucratic character of organizations. The analysis has identified a number of research problems whose results will test the validity of the formulation.

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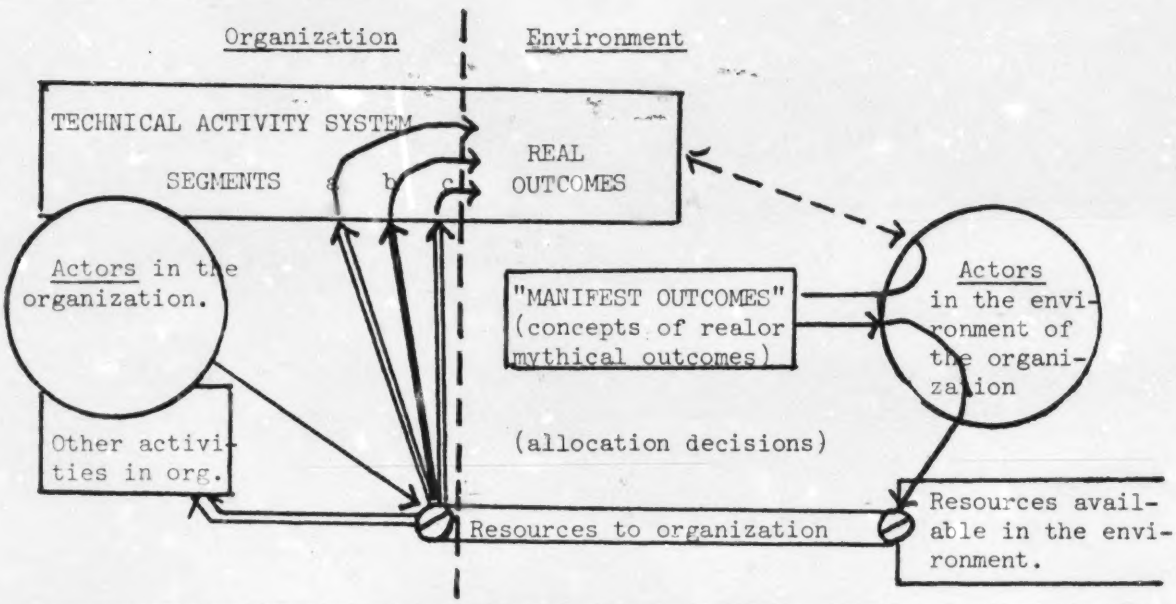
Figure 1

RESOURCE CONTROL: THE INPUT-OUTPUT CYCLE



The figure summarizes these propositions:

1. Technical system activities produce real outcomes which may or may not be recognized by the actors in the environment (e.g. unwanted, but nevertheless real and consequential outcomes such as pollution may be unrecognized at any particular time).

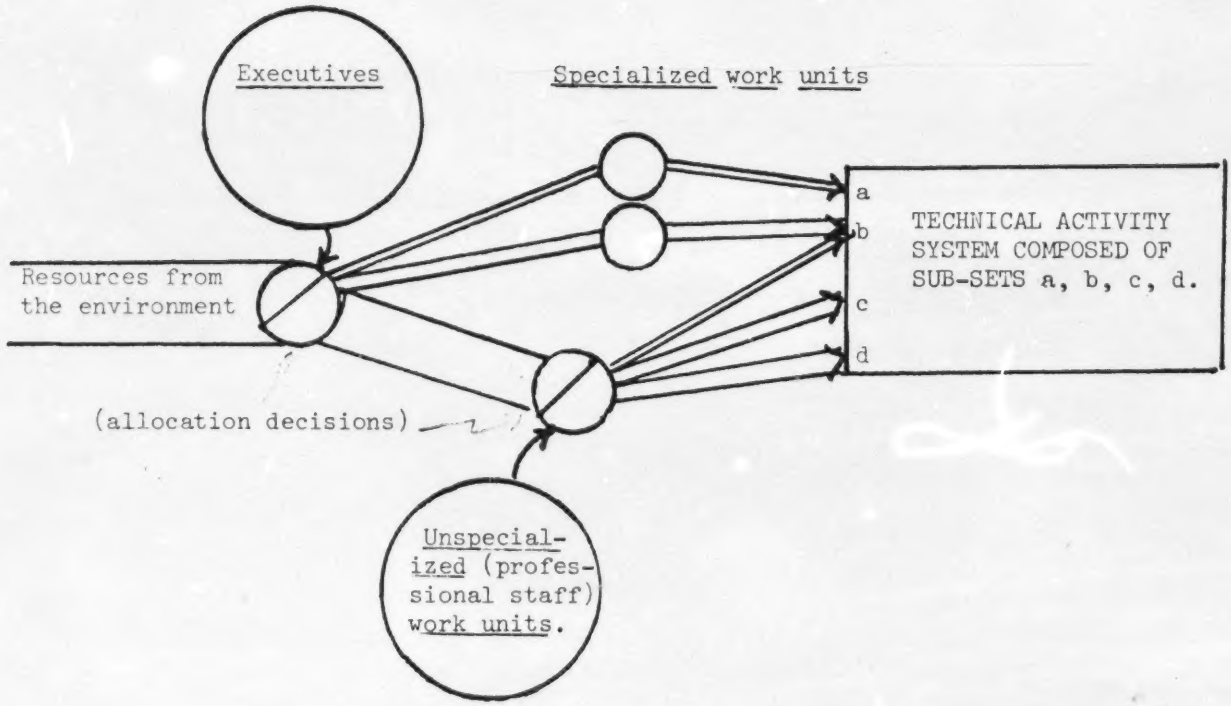
2. The interaction between actors in the environment and outcomes (or the activities themselves) produces a conception of the outcomes ("manifest outcomes") These conceptions may reflect aspects of the real outcomes or purely mythical outcomes. (Different cohorts may identify different manifest outcomes).

3. The value of the manifest outcomes (as judged by the actors in the environment) determines the amount of resources which flow to the organization. (Where there are multiple outcomes and different valuations control or mediating actors may be involved in balancing the interests of different actors.)

4. Actors within the organization determine the differential allocation of resources to sub-sets of the activity system.

Figure 2

RESOURCE CONTROL: INTERNAL ALLOCATION



The figure summarizes these propositions:

1. Executives allocate resources to specialized and to unspecialized work units.

2. Unspecialized work units allocate resources to activity system sub-sets.

3. Specialized work units do not allocate resources to activity sub-sets.

4. Thus, executives affect allocation to activities only to the extent to which they allocat resources to specialized work units.

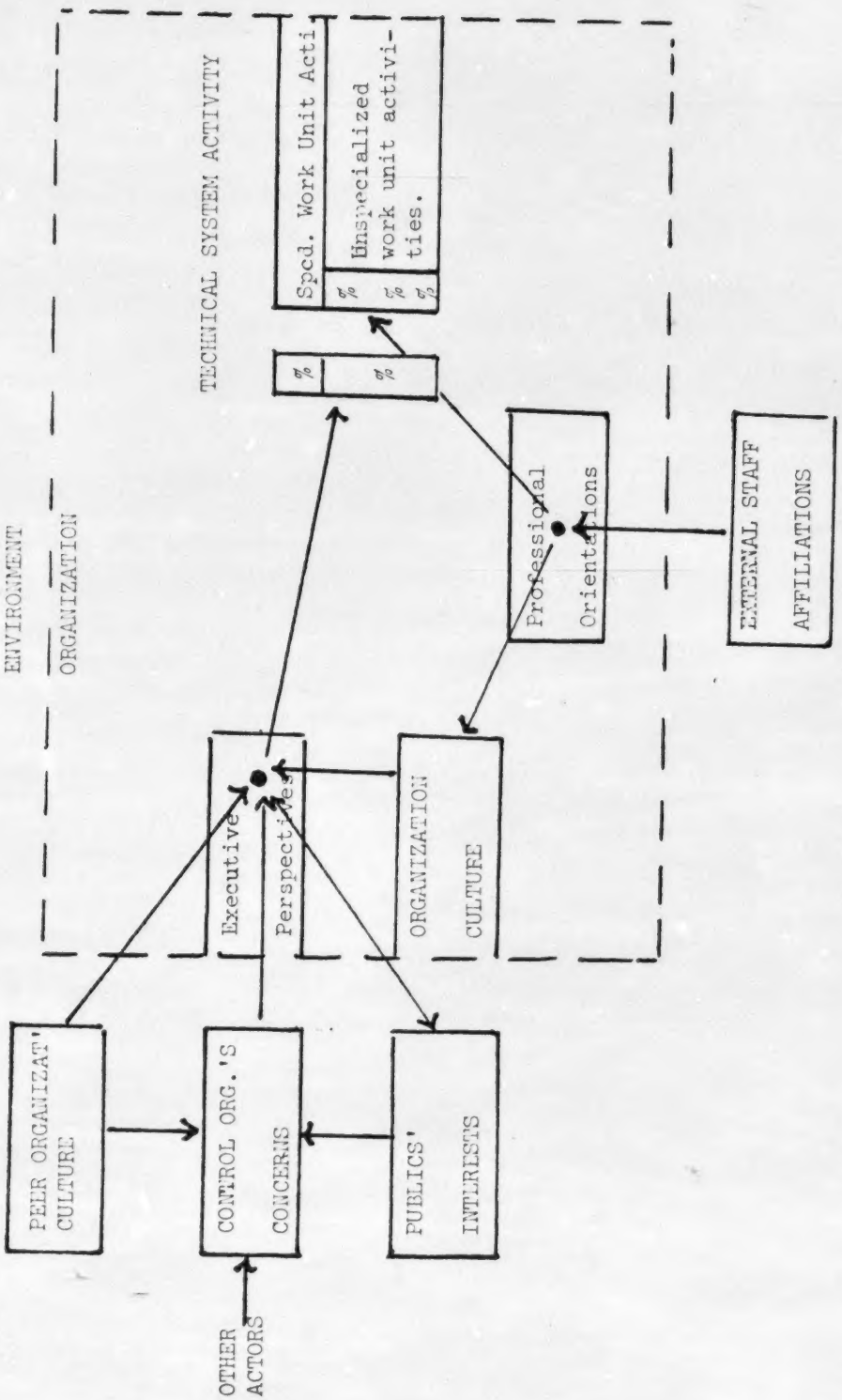


Figure 3. FACTORS IN ACTIVITY PATTERNS

Table 1. Faculty Activity Choices by Schools
With Indices of Bureaucratization and Sources of the Faculty

	University A	B	C
Activity	Percent of Times Chosen		
teaching an extra course	68	65	72
writing major research paper	71	70	61
serving on university committee	22	22	28
community service	43	39	49
prof'l society service	46	49	41
Academic Decisions	Percent of Participation		
hiring	78	68	59
tenure	64	44	44
promotion	62	42	42
curriculum	95	88	91
courses taught by self	93	90	87
loads for self	40	30	20
Sources of Faculty	Percent from the Source		
Major research university	44	(40)*	32

(*Different data base, estimated equivalence)